
de maximis, inc.

P.O. Box 90348
Knoxville, TN 37990
615-691-5052

SITE: Superior Bluff
BREAK: 34
OTHER: 57

October 5, 1988

Michelle M. Glenn
USEPA Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

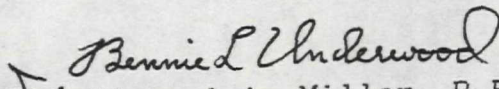
SUBJECT: BLUFF ROAD SEPTEMBER 1988 MONTHLY PROGRESS REPORT

Dear Ms. Glenn:

Pursuant to the Administrative Order By Consent enclosed is the September 1988 monthly progress report for Bluff Road.

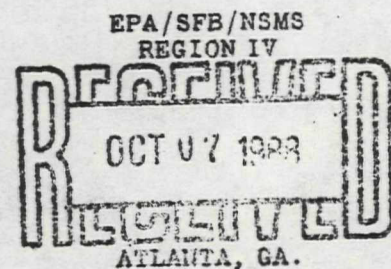
If you or your staff have further questions concerning this report, please contact me at (615) 691-5052. Thank you for your assistance.

Best regards,


For Michael A. Miller, P.E.
Senior Project Manager

cc: Lorelei Borland
IT Corporation

Enclosure



MONTHLY PROGRESS REPORT
de maximis, inc.

PROJECT NAME: Bluff Road

TIME PERIOD COVERED: 1 September through 30 September 1988

ACTIONS TAKEN TOWARD COMPLIANCE WITH ACO:

*Completed field activities that could be accomplished without full property access

PLANS AND PROCEDURES COMPLETED:

*Received written USEPA approval of the Implementation Plan on August 30, 1988, subject to amendment of the Project Schedule. A revised schedule was submitted September 6, 1988. Received written USEPA approval of the schedule on September 21, 1988. The schedule remains contingent upon USEPA obtaining appropriate access agreements.

*The Tank Sampling and Removal Plan was completed and submitted to USEPA on August 18, 1988. Received USEPA comments on September 3, 1988 and provided response to these comments on September 9, 1988. Plan approval is still pending.

*The field sampling program was initiated September 19-29, 1988. This program included ambient air sampling, surface soil sampling, lagoon sediment sampling, and lagoon water sampling. The program was limited to those properties for which site access has been obtained. Versar was on-site during this period and split samples with IT Corporation field sampling personnel. All planned samples were obtained with the exception of surface soil sample #8 due to inaccessibility and the lagoon soil samples because of the presence of an apparent asphalt liner.

*Installation of on-site facilities and utilities was completed September 17, 1988. However, field screening results indicate these must be moved due to elevated levels of volatiles in the operations area soil. The detection of elevated VOC levels in the surface soils in the operations area (project trailer and decon) was unexpected. The maximum contaminant levels in soil documented by EBASCO were a few ppm. The vapor screening in the surface soil sample holes were orders of magnitude above this (>1000ppm). Subsequent conversations with SCDHEC indicate this was known and that DHEC had installed a plastic vapor barrier and covered this with soil so they could use it as an operations area.

*A Security Service was contracted to provide security guard for the site facilities and equipment. This will continue for the duration of the project.

ACTION ITEMS FOR FOLLOWING MONTH:

*Relocate field facilities starting the week of October 10, 1988 as necessary to support future field investigation activities. This will include identifying "clean" areas for the decontamination pad and Project Trailer.

*Continue planning as appropriate for required field activities. The extent of activity will be contingent upon the status of access agreements.

*Continue to provide assistance as necessary to USEPA in obtaining the easement for the, Hopkins and Helms properties.

*Provide USEPA with revised RI/FS Project Schedule within two weeks of obtaining necessary access agreements.

ANTICIPATED DELAYS/PROBLEMS:

*Additional field activities cannot be initiated without access agreements for the Hopkins and Helms properties. The extent of delay caused by the lack of access cannot be estimated at this time. The lack of access authorizations have impacted the RI/FS Project Schedule. As a result, a force majeure event report was submitted to USEPA on October 3, 1988.

*The Task 15 (Tank Removal) activities and planning have been placed on hold pending USEPA approval of the Task 15 Supplemental Plan. The Task 15 field activities were originally scheduled for the week of October 3, 1988. Within one week of receipt of written USEPA approval, a schedule will be provided for Task 15 implementation.

*The Petrex passive soil gas survey was eliminated from the Implementation Plan scope of work. Written USEPA approval for this change was received September 21, 1988.

*Volatiles screening of surface soil samples in the operations area indicate elevated contaminant levels. The project trailer and utilities will have to be moved. In addition, the planned location for the decontamination area is now deemed unsuitable.

RESULTS OF SAMPLING/TESTING:

*The analytical results that are available for the field sampling activities conducted August 25-26, 1988 are attached. This includes the tank sludge and ambient air. The spikes and blanks provided by the Versar representative on August 25, 1988 and the preliminary lagoon composites are not yet available. The tank analysis was required to arrange disposal. The ambient air analyses indicate no contaminant concerns in the breathing zone. However, volatile screening of soils indicate that when soils are to be disturbed that increased levels of personal protection may be required.

DISTRIBUTION:

Lorelei Borland
IT Corporation



INTERNATIONAL
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ANALYTICAL SERVICES

5815 Middlebrook Pike • Knoxville, Tennessee 37921 • 615-588-6401



CERTIFICATE OF ANALYSIS

TO: IT Corporation
ATTN: D. Erikson
312 Directors Drive
Knoxville, TN 37923

DATE REPORTED: September 23, 1988
PROJECT CODE: ITEK 41880
ORDER NUMBER: 408619
PAGE 1 OF 7

Sample Description: T0825882000 (Sludge)

VOLATILE ORGANIC PRIORITY POLLUTANT ANALYSIS

| Compound | Concentration ($\mu\text{g/kg}$) | Compound | Concentration ($\mu\text{g/kg}$) |
|---------------------------------------|---------------------------------------|-----------------------------|---------------------------------------|
| acrolein ¹ | ND | 1,1-dichloroethene | ND |
| acrylonitrile ¹ | ND | trans-1,2-dichloroethene | ND |
| benzene | ND | 1,2-dichloropropane | ND |
| bromodichloromethane | ND | cis-1,3-dichloropropene | ND |
| bromoform | ND | trans-1,3-dichloropropene | ND |
| bromomethane ¹ | ND | ethyl benzene | 170,000 |
| carbon tetrachloride | ND | methylene chloride | <12,000 |
| chlorobenzene | ND | 1,1,2,2-tetrachloroethane | 110,000 |
| chloroethane ¹ | ND | tetrachloroethene | <12,000 |
| 2-chloroethylvinyl ether ¹ | ND | toluene | 73,000 |
| chloroform | 120,000 | 1,1,1-trichloroethane | ND |
| chloromethane ¹ | ND | 1,1,2-trichloroethane | ND |
| dibromochloromethane | ND | trichloroethene | 210,000 |
| 1,1-dichloroethane | ND | vinyl chloride ¹ | ND |
| 1,2-dichloroethane | ND | | |

Remarks: 12,000 = Quantitation Limit

ND = Not detected

< = Detected but at a level less than the quantitation limit.

¹ = This component has a quantitation limit two (2) times that listed.

Allyn R. Moore
Approved by Laboratory Manager

Title



Accredited by the American Association for Laboratory Accreditation in the chemical field of testing, as listed in the current AALA Directory of Accredited Laboratories

93-9-85

**CERTIFICATE OF ANALYSIS**

TO: IT Corporation
ATTN: D. Erikson
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Knoxville, TN 37923

DATE REPORTED: September 23, 1988
PROJECT CODE: ITEK 41880
ORDER NUMBER: 408619
PAGE 2 OF 7

Sample Description: T0825882000 (Sludge)

ADDITIONAL VOLATILE ORGANIC COMPOUNDS

| <u>Tentative Identification (1)</u> | <u>CAS Number</u> | <u>Concentration (2) (μg/kg)</u> |
|-------------------------------------|-----------------------|---|
| pentanal | 110-62-3 | 17,000 |
| 2-methyl butanal | 96-17-3 | 96,000 |
| m- (and p-?) xylene (3) | | 740,000 |
| o-xylene (3) | | 370,000 |

Remarks: 12,000 = Quantitation Limit
ND = Not detected

- (1) Identification based on a computer search of N.B.S. Library.
- (2) Quantitation is based on a response factor of 1.0 with respect to the nearest non-interfered internal standard.
- (3) These compounds identified and quantitated versus daily standards.


Approved by _____ Laboratory Manager

Title



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DATE REPORTED: September 23, 1988
PROJECT CODE: ITEK 41880
ORDER NUMBER: 408619
PAGE 3 OF 7

Sample Description: T0825882000 (Sludge)

BASE/NEUTRAL EXTRACTABLE ORGANIC PRIORITY POLLUTANT ANALYSIS

| Compound | Concentration (µg/kg) | Compound | Concentration (µg/kg) |
|-----------------------------|--------------------------|-------------------------------------|--------------------------|
| acenaphthene | ND | 3,3'-dichlorobenzidine ** | ND |
| acenaphthylene | ND | diethyl phthalate | ND |
| anthracene | ND | dimethyl phthalate | ND |
| benzidine * | ND | 2,4-dinitrotoluene | ND |
| benzo(a)anthracene | ND | 2,6-dinitrotoluene | ND |
| benzo(b)fluoranthene | ND | di-n-octylphthalate | ND |
| benzo(k)fluoranthene | ND | 1,2-diphenylhydrazine ¹ | ND |
| benzo(a)pyrene | ND | fluoranthene | ND |
| benzo(g,h,i)perylene | ND | fluorene | ND |
| benzyl butyl phthalate | ND | hexachlorobenzene | ND |
| bis(2-chloroethoxy)methane | ND | hexachlorobutadiene | ND |
| bis(2-chloroethyl)ether | ND | hexachlorocyclopentadiene | ND |
| bis(2-chloroisopropyl)ether | ND | hexachloroethane | ND |
| bis(2-ethylhexyl)phthalate | ND | indeno(1,2,3-cd)pyrene | ND |
| 4-bromophenyl phenyl ether | ND | isophorone | 3,000,000 |
| 2-chloronaphthalene | ND | naphthalene | ND |
| 4-chlorophenyl phenyl ether | ND | nitrobenzene | ND |
| chrysene | ND | N-nitrosodimethylamine | ND |
| dibenzo(a,h)anthracene | ND | N-nitrosodi-n-propylamine | ND |
| di-n-butylphthalate | ND | N-nitrosodiphenylamine ² | ND |
| 1,2-dichlorobenzene | ND | phenanthrene | ND |
| 1,3-dichlorobenzene | ND | pyrene | ND |
| 1,4-dichlorobenzene | ND | 1,2,4-trichlorobenzene | ND |

Remarks: 500,000 = Quantitation limit.

ND = Not detected.

< = Detected but at a level less than the quantitation limit.

* = This compound has a quantitation limit five (5) times that listed.

** = This compound has a quantitation limit two (2) times that listed.

¹ Screened for as Azobenzene

² Detected as Diphenylamine

Alice R. Moore
Approved by Laboratory Manager

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ORDER NUMBER: 408619
PAGE 4 OF 7

Sample Description: T0825882000 (Sludge)

ACID EXTRACTABLE ORGANIC PRIORITY POLLUTANT ANALYSIS

| <u>Compound</u> | <u>Concentration</u> ($\mu\text{g/kg}$) | <u>Compound</u> | <u>Concentration</u> ($\mu\text{g/kg}$) |
|------------------------------|--|-----------------------|--|
| 4-chloro-3-methylphenol | ND | 2-nitrophenol | ND |
| 2-chlorophenol | 28,000,000 | 4-nitrophenol | ND |
| 2,4-dichlorophenol | 550,000 | pentachlorophenol | ND |
| 2,4-dimethylphenol | ND | phenol | 11,000,000 |
| 2,4-dinitrophenol * | ND | 2,4,6-trichlorophenol | <500,000 |
| 2-methyl-4,6-dinitrophenol * | ND | | |

Remarks: 500,000 = Quantitation limit.

ND = Not detected.

< = Detected but at a level less than the quantitation limit.

* = This compound has a quantitation limit of five (5) times that listed.

Allyse R. Moore
Approved by Laboratory Manager

Title



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DATE REPORTED: September 23, 1988
PROJECT CODE: ITEK 41880
ORDER NUMBER: 408619
PAGE 5 OF 7

Sample Description: T0825882000 (Sludge)

ADDITIONAL EXTRACTABLE ORGANIC POLLUTANTS

| <u>Compound (1)</u> | <u>CAS Number</u> | <u>Concentration (2)</u> ($\mu\text{g/kg}$) |
|---------------------------------|-------------------|--|
| cyclohexene | 110-83-8 | 9,200,000 |
| phenol, 2-bromo-4-chloro- | 695-96-5 | 680,000 |
| phenol, 2-bromo-4-chloro- | 695-96-5 | 790,000 |
| phenol, 2-bromo-4-chloro- | 695-96-5 | 550,000 |
| 1-butanamine, 3-methyl-n-n-bis(| 645-41-0 | 8,800,000 |
| 1-pentamine, n,n,-dipentyl- | 621-77-2 | 13,000,000 |
| 1-butanamine, 3-methyl-n,n-bis(| 645-41-0 | 720,000 |
| unknown (phthalate?) | | 3,100,000 |
| unknown | | 420,000 |
| unknown | | 890,000 |
| unknown | | 1,400,000 |
| metetilachlor | 51218-45-2 | 1,200,000 |
| unknown | | 3,200,000 |
| unknown | | 1,200,000 |
| chloropropylate (ACN) | 5836-10-2 | 8,700,000 |
| unknown | | 990,000 |
| bromopropylate (ACN) | 18181-80-1 | 9,100,000 |
| unknown | | 6,000,000 |

Remarks: 500,000 = Quantitation Limit
ND = Not detected

(1) Identification based on a computer search of N.B.S. Library.

(2) Quantitation is based on a response factor of 1.0 with respect to the nearest non-interfered internal standard.

Allyn R. Moore
Approved by Laboratory Manager

Title

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DATE REPORTED: September 23, 1988
PROJECT CODE: ITEK 41880
ORDER NUMBER: 408619
PAGE 6 OF 7

Sample Description: One (1) sludge sample received August 27, 1988

Concentration units are mg/kg (ppm)

| | Aroclor 1016, 1232 1242† and/or 1248 | Aroclor 1254 | Aroclor 1260 | Total Aroclors |
|-------------|--|-----------------|-----------------|-------------------|
| T0825882000 | <0.3* | <0.4* | <0.5* | <0.5* |

†Sample Aroclor pattern identified and/or calculated as Aroclor 1242.

*Higher detection limit due to interference.

Allyn S. Moore
Approved by Laboratory Manager

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DATE REPORTED: September 23, 1988
PROJECT CODE: ITEK 41880
ORDER NUMBER: 408619
PAGE 7 OF 7

Sample Description: One (1) sludge sample received August 27, 1988

Concentration units are mg/kg (ppm)

ICAP SCAN

T0825882000

| | |
|------------|---------|
| Silver | <1 |
| Aluminum | 1,730 |
| Arsenic | 24 |
| Boron | <2 |
| Barium | 30.1 |
| Beryllium | <0.2 |
| Calcium | 574 |
| Cadmium | <1 |
| Cerium | 12 |
| Cobalt | 8 |
| Chromium | 536 |
| Copper | 430 |
| Iron | 109,000 |
| Potassium | <200 |
| Lanthanum | 3 |
| Lithium | 2 |
| Magnesium | 178 |
| Manganese | 422 |
| Molybdenum | <2 |
| Sodium | 10,100 |
| Niobium | <2 |
| Nickel | 37 |
| Phosphorus | 1,050 |
| Lead | 36 |
| Antimony | 439 |
| Selenium | <12 |
| Silicon | 153 |
| Tin | 27 |
| Strontium | 2.5 |
| Thorium | <2 |
| Titanium | 34.5 |
| Thallium | <6 |
| Uranium | <40 |
| Vanadium | 4 |
| Yttrium | 2 |
| Zinc | 105 |
| Zirconium | <1 |
| Mercury | 1.6 |


Approved by _____ Laboratory Manager

Title

IT-Knoxville
Dike Erikson/Doug Perry

Job #48543
Page 2

Table I
Summary of
Volatile Organic Compounds
For
IT-Knoxville
(Bluff Road)

Units: Nanograms/Liter
Date Analyzed: 9-22-88

| Compound | Detection Limit | J0334 | J0335 | J0336 | Method Blank |
|--------------------------------------|-----------------|-------|-------|-------|--------------|
| Chloromethane | 40 | ND | ND | ND | ND |
| Bromomethane | 40 | ND | ND | ND | ND |
| Vinyl chloride | 40 | ND | ND | ND | ND |
| Chloroethane | 40 | ND | ND | ND | ND |
| Dichloromethane (methylene chloride) | 20 | ND | ND | ND | ND |
| Acetone | 40 | ND | ND | ND | ND |
| Carbon disulfide | 20 | ND | ND | ND | ND |
| 1,1-Dichloroethylene | 20 | ND | ND | ND | ND |
| 1,1-Dichloroethane | 20 | ND | ND | ND | ND |
| 1,2-Dichloroethenes (Total) | 20 | ND | ND | ND | ND |
| Chloroform | 20 | ND | ND | ND | ND |
| 1,2-Dichloroethane | 20 | ND | ND | ND | ND |
| Methyl ethyl ketone (2-Butanone) | 40 | ND | ND | ND | ND |
| 1,1,1-Trichloroethane | 20 | ND | ND | ND | ND |
| Carbon tetrachloride | 20 | ND | ND | ND | ND |
| Vinyl acetate | 40 | ND | ND | ND | ND |
| Bromodichloromethane | 20 | ND | ND | ND | ND |
| 1,2-Dichloropropane | 20 | ND | ND | ND | ND |
| trans-1,3-Dichloropropene | 20 | ND | ND | ND | ND |
| Trichloroethene | 20 | ND | ND | ND | ND |
| Chlorodibromomethane | 20 | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | 20 | ND | ND | ND | ND |
| Benzene | 20 | ND | ND | ND | ND |
| cis-1,3-Dichloropropene | 20 | ND | ND | ND | ND |
| 2-Chloroethyl vinyl ether | 40 | ND | ND | ND | ND |
| Tribromomethane, (Bromoform) | 20 | ND | ND | ND | ND |
| 2-Hexanone | 40 | ND | ND | ND | ND |
| 4-Methyl-2-pentanone | 40 | ND | ND | ND | ND |
| Tetrachloroethene | 20 | ND | ND | ND | ND |
| 1,1,2,2-Tetrachloroethane | 20 | ND | ND | ND | ND |
| Toluene | 20 | 27 | 22 | ND | ND |
| Chlorobenzene | 20 | ND | ND | ND | ND |
| Ethyl benzene | 20 | ND | ND | ND | ND |
| Styrene | 20 | ND | ND | ND | ND |
| Xylenes (Total) | 20 | ND | ND | ND | ND |
| Acrolein | 80 | ND | ND | ND | ND |
| Acrylonitrile | 20 | ND | ND | ND | ND |
| Dichlorobenzenes | 20 | ND | ND | ND | ND |

ND - The analyte was not detected at or above the stated detection limit.

Table IISummary of
Surrogate Spike Recoveries
For
IT-Knoxville
(Bluff Road)Percent Recovery

| | <u>1,2-Dichloroethane-D4</u> | <u>Toluene-D8</u> | <u>4-Bromofluorobenzene</u> |
|--------------|------------------------------|-------------------|-----------------------------|
| Method blank | 94 | 87 | 120 |
| J0334 | 93 | 87 | 120 |
| J0335 | 96 | 86 | 117 |
| J0336 | 93 | 86 | 122 |